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MEXICO:
Problems of Malnutrition, Food Costs

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MEXICO: Problems of Malnutrition, Food Costs

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[Text of Chapter II: "The Food Crisis, 1983-1987" from book "Crisis Agricola y Alimentaria en Mexico, 1982-1988" [Agricultural and Food Crisis in Mexico, 1982-1988] by Jose Luis Calva, Fontamara, 5,000 copies, 230 pages]

[Text] The gloomy outlook that the new agricultural crisis represents for Mexico's immediate future, although its causes are obviously serious and deep rooted, is not the most disturbing product of the economic policy that has been pursued since December 1982. Nor is it the deepening of our food dependence. The most searing problem is the dramatic deterioration of the diet of the poor in Mexico since 1983.

The chronic hunger, technically called malnutrition, that has plagued the majority of Mexicans since before the overall crisis in the Mexican economy has worsened alarmingly. The severe cutbacks in the consumer food basket that began in 1983 have given rise to a veritable food crisis. Countless children who used to suffer moderate malnutrition today show signs of severe malnutrition. Infant morbidity and mortality resulting from malnutrition have reached alarming proportions. But what is even more disturbing is the irreversible damage caused by the food debacle: The huge and growing number of children who have symptoms of severe malnutrition today are being seriously hampered in their physical and mental development, and will be branded forever as the crisis generation.

a. Nutritional Deterioration: 1983-1987

The drastic reduction in the consumption of meats, milk, fish, etc. (or the complete absence of these foods in the diet) has been a harsh fact of life in the majority of Mexican households since 1983. No one is unaware of the nutritional deterioration. But what are the social implications of this terrible development that has stemmed from the general crisis in the Mexican economy, or rather, from the way in which the crisis has been managed, and to a certain extent produced, since 1982?

By analyzing the annual statistics on apparent consumption, one can obtain an initial measure of the phenomenon. Taking the biannual averages of 1981/1982 and 1985/1986, we see a sharp drop in per capita consumption of the most important foods: beef consumption fell from 15.8 kg a year per person in 1981/1982 to 11.6 kg in 1985/1986, a decline of 26.6 percent. Pork consumption fell by 30.4 percent, fresh milk consumption was off 12.7 percent, per capita fish consumption declined 29.4 percent, beans 28.1 percent. The consumption of inexpensive fruits has also been severely affected: oranges down 13.5 percent, bananas 28.4 percent. There has even been a drop in per capita corn consumption of 6.2 percent (see Table 14). We might observe, incidentally, that this downturn in per capita corn consumption does not contradict the increase in tortilla consumption (as a substitute for other, more nutritional foods) that has been revealed in research by the National Nutritional Institute (INN) and the National Consumers Institute (INCO). What this points to is lower consumption of corn as animal feed, caused by the plummeting consumption of livestock products. This decline can also be seen in sorghum, which apparently fell from 104 kg per capita in 1981/1982 to 91.6 kilos in 1985/1986.

These figures in no way exaggerate the dietary decline in the Mexican population. On the contrary, they may actually underestimate it (the figures come from the official sources cited in the table).

Statistics on the supply of beef to the metropolitan zone of Mexico City indicate an even sharper drop in meat consumption in the urban conglomerate where just over one-fifth of the population of Mexico lives. Here, beef consumption per capita plunged 45.1 percent between 1982 and 1987!

The consumption of eggs and chicken has fallen off drastically since 1983, as we all know. This decline is reflected in the surveys of the National Nutritional Institute and the National Consumers Institute, which we will analyze later, and is corroborated by the plummeting production of balanced poultry feed and the downslide in per capita consumption of sorghum, as stated above. Nevertheless, the official statistics for poultry products are particularly unreliable (aside from the fact that the various sources contradict each other). For this reason, we would rather defer to the secretary of the National Union of Poultry Breeders. When announcing a 40-percent reduction in the price of chicken as of 27 January 1988, Carlos Sanchez Widmann "stated that the amounts of chicken available are unlimited, because '39 million to 40 million chickens are consumed each month, although that is lower than the 53 million consumed 2 years ago,' and explained that the decline in consumption is due to the loss of buying power of workers' wages."[13] In other words, just between January 1986 and January 1988, chicken consumption dropped 26 percent!

If we recall that the greatest deterioration of the workers' buying power occurred in 1983, when wages plunged 30 percent, we can grasp the real magnitude of the decline in poultry consumption. But the story does not end here. A few days after the noisy publicity campaign announcing the 40 percent reduction in the price of chicken, the distributors announced that "in spite of the discount, poultry consumption has not increased because of the low purchasing power of wages."[14]

The reduced consumption of animal products can be seen not only in the poorest sectors of society, but also among white-collar workers and urban blue-collar workers who have regular jobs and earn more than the

minimum wage. In a summary of the results of four surveys conducted in 1960, 1979, 1981, and 1987 among working-class families in Mexico City, researchers at the National Nutritional Institute found that per capita meat consumption fell from 124 grams per day in 1981 to just 78 grams in 1987, a 37-percent decline. This indicates that the drop in consumption of this kind of animal proteins has been more severe in the working class than the national average (even though only 9 percent of the sample of workers earned less than the minimum wage, and 26 percent even earned more than three times the minimum wage). The researchers also found a reduction of milk and egg consumption (see Table 16), although less severe than that of meat.

The most significant aspect of this research is the detailed analysis of the regressive shift in the diets of workers since 1981.[15] "The first survey (1960) reflects a transitional eating pattern between the rural diet and what has subsequently been defined as an urban model. It has rural characteristics because a lot of tortillas, beans, bread and pastas are eaten, with few fruits and vegetables; quantities of eggs and meat are small, and the quantity of milk corresponds to a daily allowance." In 1981, "just 21 years later, the urban diet is fundamentally different. The amount of tortillas and beans is down, while processed foods and beverages are up, and processed meats and dairy products make their appearance. The changes are very noteworthy in terms of animal products, especially with regard to meat and eggs.... Between 1981 and 1987 there is a clear regression in the diet. Consumption levels are approximately those of 1970-1975, that is, a projection between the 1960 and 1981 levels." The composition of proteins and calories according to the quality of sources has regressed, in fact, to the levels that were common before the late 1970s. The consumption of tortillas as a subsitution for products with a higher biological value is on the rise. In 1960, proteins "came primarily from foods of plant origin, whereas in 1981 they came from foods of animal origin. In 1987, the plant proteins once again surpassed the animal proteins."

This dietary regression, conclude nutritionists, "has been very drastic, and if it continues at the same pace, in just 2 years we will be back at the urban diet levels of 1960."[16] With a per capita GDP of more than $2,000 a year as a result of the growing productivity of Mexican workers' labor, the nation, governed by Harvard technocrats, is about to plunge its workers into the consumption patterns of the slave-like peons of the traditional haciendas.

Among the population whose income is less than twice the minimum wage, the decline in consumption of nutrients has been even more dramatic than in the urban working class as a whole, as indicated by the surveys conducted by the National Consumers Institute. Between March and June 1983, that is, the year when real wages took the worst beating, more than half the families began consuming less of the most important foods. Meat consumption fell for 59.6 percent of them; dairy products were down 73.5 percent, eggs 74.2 percent, fish 50.2 percent, beans 72.7 percent, bread 68.1 percent, fruits 21.9 percent, and vegetables 70.2 percent. Many families were even forced to eliminate entirely from their diets meat (11.4 percent of families), dairy products (6.7 percent), and fish (3.7 percent). Between June 1983 and June 1984, the reductions were less visible, probably because in most cases they had already reached tolerable limits of consumption (or nonconsumption). But even during that period, 6.5 percent more families completely eliminated meat from their diets; 12.4 percent did so with eggs, 12.4 percent with dairy products, 10.6 percent with fruits, and 10.1 percent with vegetables (see Table 17).

When the National Food Commission drafted the National Food Program (PRONAL) 1983-1988, which was completed in October 1983, a severe nutritional decline with respect to 1982 was already apparent, and the nutritional levels of 1984 could be projected. The program predicted a drop of 13 percent in calorie consumption (in 1984 with respect to 1982) among low-income Mexicans, a decline of 14 percent in their consumption of proteins as a whole, and a 54-percent reduction in their consumption of animal proteins (see Table XV) [table not reproduced here]. In addition, with a consistency not often seen in official programs, the National Food Commission predicted in detail the decline in effective demand for the principal foods among the low-income population: dairy products, -53.5 percent; fish, -71.8 percent; poultry, -71.8 percent; eggs, -51.7 percent; wheat, -49.2 percent, etc. (see Table XVI) [table not reproduced here]. Of all the targets of the PRONAL, these are the only ones that have been met and exceeded to date. The planned recovery of dietary levels has remained on paper, as have the other objectives for agriculture, livestock, and fishing development.

b. Chronic Malnutrition Among Mexico's Poor

If we recall that these sharp cuts in the popular food basket are taking place in a society that was already suffering severe nutritional deficiencies before the crisis, we will be able to grasp the magnitude of the disastrous effects the economic policy implemented in December 1982 has had on public health in Mexico.

Even the PRONAL acknowledged that before the crisis, "40 percent of the population did not earn enough to cover their basic dietary needs" (p 32); that in 1979, "19 million people had severe deficits in their calorie and protein consumption" (p 13); and that "of the 2 million children that are born each year in the country, 100,000 die in the first few years of life due to factors related to poor nutrition, and 1 million survive with physical or mental defects attributable to dietary insufficiencies" (p 13). Considering these dramatic admissions, the nutritional situation of the Mexican population is even more pathetic.

According to the research conducted in 1979 by the National Nutritional Institute, around two-thirds of the preschool population in low-income urban families suffered from malnutrition; 18 percent had severe malnutrition, that is, a real weight that was only 60 to 75 percent of their ideal weight (see Table XVII) [table not reproduced here]. These are the "Biafran" children we have always had in the cities of Mexico.

In the countryside, the nutrition situation is even worse. According to the INN survey of 1979, malnutrition was found in between 52 percent and 87 percent of the rural child population in the majority of the nutritional regions into which the country was divided (see Table 18). Their daily calorie consumption hovered around 65 percent of the recommended minimum, while their protein consumption was about 75 percent. Among the overall population (adult and child) of the different regions, between 42.8 and 88.5 percent showed deficiencies in their protein consumption. In just 2 of the 19 nutritional regions was there an adequate consumption of calories, and in only one region was there adequate protein consumption.

To gain an idea of the overal nutritional state of the Mexican population in both rural and urban areas during the years prior to the crisis, let us look, finally, at the summary results of the surveys conducted by the INN during the 1969-1982 period. In the three most densely populated geoeconomic zones of the country (the West Central, the South, and the Gulf of Mexico), average calorie consumption fell short of the recommended minimum by between 5.9 and 18.9 percent. Protein consumption showed much more severe deficiencies in all zones, falling short of the minimum requirements by 18.9 to 38.9 percent (see Table 19). Even more deficient was the quality of the proteins ingested: Animal proteins accounted for a tiny proportion of the total, between 16 and 24 percent, while well-fed countries obtain half their proteins from animal products. By way of comparison, according to the annual reports of the FAO, while the developed capitalist countries consume 98.9 grams of protein per capita per day, of which 56.2 grams is animal protein; and the developed countries in transition to socialism (USSR and Eastern Europe) consume 100.6 grams of protein per day, of which 51.4 percent are of animal origin[17]; the national surveys of the INN found that the average consumption of animal protein was 7.7 grams in the West Central zone, 15 grams in the Gulf zone, 8.7 grams in the South, 9.6 grams in the Southeast, and 14.3 grams in the North. As a result, child malnutrition is observed in the following percentages: 83.9 percent of all children in the first zone are malnourished, while the figures for the following zones are 69.4 percent, 89.9 percent, 91.9 percent, and 34 percent.

Chronic hunger, as manifested in the underconsumption of calories and proteins and in high rates of child malnutrition, aroused the indignation and profound concern of Mexican nutrition specialists and international experts even before the crisis. Dr Rafael Ramos Galvan, of the Department of Nutrition of the Children's Hospital of Mexico, noted that in nearly every part of the country, "animal proteins represent no more than 10 grams per person per day." He went on to emphasize that "proteins of high biological value are so essential to life, and as such constitute cell structures, that this significant deficit can only translate into physical degeneration or death during the stages of life when growth is normally most intensive. Mortality will be greater, and in the subjects who survive, physical growth will be severely affected."[18] "Mortality is intimately related to malnutrition, so much so that 75 percent of all deaths occur in subjects who are in poor nutritional condition; the contributing cause is generally an infection." In a sample of 3,501 clinical cases, Dr Galvan found that among normal children or those with moderate malnutrition, diarrhea took the lives of 10.8 percent of those who fell ill, while among those suffering from second-degree malnutrition the percentage of deaths rose to 19.5 percent. And those suffering from third-degree malnutrition died at an appalling rate of 44.7 percent. "By the age of 6 years, practically all those suffering from third-degree malnutrition have died." First-degree malnutrition (children who weigh 75 to 90 percent of the ideal weight for their height) affected 48.8 percent of preschoolers in rural areas, 42.4 percent in urban areas. Second-degree malnutrition (60 to 75 percent of the ideal weight) affected 25.0 percent of rural preschoolers and 15.1 percent of urban preschoolers. And third-degree malnutrition (less than 60 percent of the ideal weight) was reported in 2.4 percent of the rural preschoolers and 0.9 percent of their urban counterparts. The cases of second- and third-degree malnutrition should not be the only ones to cause concern, warns Dr Galvan. First-degree malnutrition means "suffering chronic primary malnutrition; in other words, the lack of nutrients begins affecting the child before birth, and this aggression, sustained over months or years, leads to a response of adaptation which is part of the clinical pattern of chronic malnutrition. When the mechanisms of adaption fail because the exhaustive phase has been reached, or because the chronic situation is aggravated by an acute episode, the subject dies. When this does not happen, the individual degenerates physically and reaches a new somatic equilibrium (homeorrhesis), to the detriment of stature. Such is the case with preschoolers suffering from first-degree malnutrition, and those suffering from second-degree malnutrition who manage to survive to attain a final height of 10 to 15 cm less than what they could genetically be expected to attain." This is the reason why the adult rural population, where the number of malnourished people is highest, reaches a significantly lower height (10 percent or more below the norm) than the urban population, where malnutrition is relatively less prevalent.

But the most disturbing aspect is not the irreversible damage that chronic malnutrition causes to physical development, but the damage to the children's mental development. Dr Joaquin Cravioto of the Children's Hospital of Mexico reports that "studies of children who

suffered malnutrition in early infancy provide circumstantial evidence that malnutrition, when it occurs during the critical periods for the growth and development of the central nervous system, may produce irreversible changes that affect the subsequent mental development of the individual and reduce his capacity for learning."[19] Dr Leopoldo Vega Franco sums up the results of research indicating "a delay in the development of motor, language, adaptation, and personal-social skills in malnourished children."[20] Detailed studies of malnourished children reveal that "the DNA content of the brain differs from the normal content, depending on the age at which malnutrition occurs." In malnourished children under the age of 1 year, it has been observed that "the number of cells in the brain, quantified indirectly by their DNA content, was reduced to just under half." The conclusion is obvious: Severe malnutrition can lead to intellectual deficiency.... "The negative effect of the malnutrition under study may be manifested in apathy in learning and other situations related to success in life."[21]

Dr Salvador Zubiran (founding director of the National Nutritional Institute, which today bears his name), referring to the subsector of the population where chronic hunger is most prevalent, wrote: "Rural dwellers, whose diet consists primarily of corn, receive only 2,090 calories with 35.7 grams of protein, of which 18 percent is of animal origin.... The inadequate and insufficient diet in the rural sector becomes tragic when we consider what children eat.... In rural areas, they get 910 calories with 24.5 grams of protein, of which only 20 percent is of animal origin." As we can see, Dr Zubiran, like Dr Ramos Galvan, Dr Chavez, and other illustrious Mexican nutrition specialists, draws society's attention not only to the tragic quantitative deficiency of the rural diet, but primarily to the more tragic qualitative deficiency: the meager intake of foods with a high biological value (that is, foods of animal origin).

The diet of most of the rural population, says Dr Zubiran, "is made up of foods of plant origin, whose proteins are of a lower quality than those of animal origin. Neither corn nor beans contain sufficient protein, and moreover, the protein they do have is not as high quality as that obtained from meat and milk. Plant proteins are characterized by an imbalance of amino acids, which makes them less digestible. This has been proven by our Department of Biochemistry. The intestinal absorption of amino acids is optimal when these acids are present in sufficient quantities, since they pass through the mucous membranes at their own absorption rate. They compete among themselves, one might say, to make use of the absorption mechanisms." How are the amino acids unbalanced, Dr Zubiran is asked. "Proteins of plant origin are more or less deficient in essential amino acids: tryptophan, methionine, lysine, and threonine. Sometimes valine is also present in small quantities." So plant foods are not enough to provide complete nutrition? "No matter how much one consumes, they will never be enough. The content of animal proteins is the best measure of the quality of a diet. The higher the incidence of this type of food in the diet, the healthier the population."[22] This is why Dr Zubiran describes the diet of the rural populace as tragic: the amounts of food are insufficient, and moreover, less than 20 percent of the protein ingested is of animal origin.

As pathetic as this dietary evaluation is, it was conducted during a period when more foods were available domestically than there are today. Thus, the undernourishment of the poorest sectors of the rural population is even more serious now than it was when Dr Zubiran drew attention to it. Because the general averages reported by Dr Zubiran do not take into account the stratification of consumption, which is inevitable in a capitalist market economy. According to the 1970 General Population Census, 33.8 percent of the rural population did not eat meat a single day of the week, 32.8 percent did not eat eggs, 60.4 percent did not drink milk, and 78.8 percent did not eat fish (see Table XVIII) [table not reproduced here]. In 1980, thanks to the oil bonanza, the expansion of urban and rural employment, and the incentives and subsidies provided for agriculture-livestock production, the situation of the rural population improved slightly. But the overall picture of chronic malnutrition resulting from the severe deficiency of animal protein consumption remained practically unaltered: According to the 1980 General Population Census, 32.4 percent of the rural population did not eat meat or chicken, 18.5 percent did not eat eggs, 50.7 percent did not drink milk, and 75.7 percent did not eat fish (see Table 20). In the cities, the situation had improved a little more (which confirms the findings of the research conducted by the National Nutritional Institute among workers in Mexico City). However, signs of severe undernourishment remained, as attested by the fact that right in the middle of the oil boom, 10.2 percent of the urban population ate neither meat nor chicken, 18.2 percent did not eat eggs, 57.2 percent did not eat fish, and 16.7 percent did not drink milk! And despite the fact that the subsidies on imported rehydrated milk reached their highest level ever in this year of the Mexican Food Supply System (SAM) and the oil boom, one in every six urban households did not have enough money to buy milk even once a week!

One might suppose that the lowest strata of the rural and urban populations may have managed to consume some animal protein by eating at least some livestock products. But this supposition is incorrect, as indicated by the special statistical compilation carried out just one time, in the 1970 Population Census. The general census found that 1,084,586 households did not consume any meat, eggs, milk, or fish even once a week (see Table 21)! This means that more than 5 million Mexicans did not taste a single gram of animal products. The census did not specify the area distribution of this population, but it was undoubtedly mainly rural. Nonetheless, part of this population that is living in literally subhuman dietary conditions (mankind, human beings, are by definition omnivorous; that is, for their normal development and foods. A diet that does not contain animal products is, by

definition, an inhuman, subhuman, or infrahuman diet) also lived in urban areas. Proof of this assertion can be found in the prevalence of second-degree (14.8 percent of children) and third-degree (1.3 percent) malnutrition among city children, according to nutritional diagnoses performed in urban areas during the same year as the census.[23] Clinical examination of malnourished children revealed the characteristic symptoms of hunger: "alterations of the hair, which have a high correlation with calorie-protein deficiency; signs of deficiency in the eyes, especially in the conjunctivae, associated with vitamin A; alterations in the lips, tongue, and mucous membranes, associated with riboflavin; alteration of the gums for lack of vitamin C; enlargement of the thyroid, due to iodine deficiency; alterations of the skin, pellagrous in nature, associated with niacin; edema in the malleoli, eyelids, cheeks, and other areas, due to calorie-protein deficiency. In addition, there are other factors that are affected by a special pathology in the malnourished individual."[24]

c. Worsening of Malnutrition: 1983-1987

In this context of chronic malnutrition, the effects of the drastic reduction in the consumption of animal foods (and even protein-containing seeds such as beans) that have been observed between 1983 and 1987 are truly frightening. "The urban, low-income child population," reported Dr Hector Sanroman in 1987, "went from moderate malnutrition to severe malnutrition; the problem is most serious in the poorest rural and urban classes, where infant mortality has reached alarming proportions."[25] In its 1986 report, the United Nations Children's Fund (UNICEF) indicates that Mexico is among the countries at "high risk" for malnutrition and infant mortality. A study by the World Health Organization points out that between 1983 and 1986 the country's nutritional levels fell drastically, and that "at present they are well below those of a decade ago."[26] "In my school," reported Soledad Espinosa, a teacher, in January 1988, "the children sometimes arrive without having eaten. They are hungry, so they don't learn. Sometimes they vomit right in the middle of the classroom because they haven't eaten."[27]

This is an inevitable consequence of the decline in real wages to less than half the buying power they had between 1976 and 1979, when most of the nutritional studies analyzed in the previous section were conducted. According to the National Survey of Household Income and Spending, carried out by the Planning and Budget Secretariat (SPP) in 1977, more than 50 percent of households earned less than the general minimum wage (which at the time was 3,192 pesos per month), and the families in the first six deciles spent more than 50 percent of their income on food and beverages (see Table 22). If real wages have fallen between 1977 and 1987 to less than half their 1977 value in terms of purchasing power, the devastating effects of wage policy on the diet of 60 percent of the population are obvious and frightening.

To illustrate the repercussions of a 50-percent cut in income when family earnings are equal to or less than the minimum wage, let us look at the results of a nutritional survey conducted by the INN among preschoolers in a rural community in Puebla. The study took place just a few months before the outbreak of the crisis. The children without visible nutritional deficiencies belonged to families whose average incomes were higher than the minimum wage; the children with slight malnutrition belonged to families whose average incomes were approximately the minimum wage (these children were at 10 to 20 percent below their ideal weight, had a 21.63 percent deficit in their calorie intake, and a 12.91 percent deficit in their overall protein consumption, regardless of the quality of that protein); but the children who suffered from severe malnutrition, the Biafrans of the community, came from families whose average incomes were 50.5 percent of the minimum wage for 1981-1982. These children weighed between 60 and 70 percent of their ideal weight, suffered from severe hunger (they consumed only 62.65 percent of their calorie requirements and 73.02 percent of their minimum protein needs), and showed signs of deficient intake of all of the most important vitamins and minerals (see Table 23).

In fact, the most profound structural change introduced in the Mexican economy since 1982 has been the erosion of minimum wages to less than half the buying power they had in 1976 (46.9 percent, to be exact, as of 30 December 1987), and 60 percent of the 1981 buying power. This means that the families with incomes near the minimum wage, who were barely able in 1978 or 1981 to support their children at a level of slight malnutrition, were deprived of a vital part of their meager food basket, and that a significant portion of children suffering from slight malnutrition in 1981 suffered from severe malnutrition in 1983-1987.

Dr Beatriz Cardenas of the National Autonomous University of Mexico (UNAM) Medical School declared in August 1987: "In the last few years malnutrition among the poor of this country has increased significantly.... The food problem and the consequent hunger and malnutrition have condemned millions of children to death before their first birthdays, and have doomed a high number of the remainder to die before they turn five.... Hunger is a severe state of dietary insufficiency that causes suffering and physical, mental, and moral illness."[28]

Statistics from the Children's Hospital of Mexico also "reveal that since 1982, the incidence of malnutrition among children under the age of five and disorders caused by vitamin deficiencies have increased."[29] "Malnutrition is one of the most serious problems affecting the infant population in this area," reported Drs J. Morales and J. Salazar, chiefs of the pediatrics departments of the Civilian Hospital and the General Hospital of Ciudad Madero and Tampico, last May. "Many children die within a few days or months of birth....

Ninety percent of the young patients who are seen at the Civilian Hospital of Ciudad Madero are suffering from malnutrition, advanced in most cases.... As long as the distribution of elements to meet their needs remains poor," declared Dr Salazar, "many children will continue dying of malnutrition."[30]

A large number of children literally starve to death (acute hunger), according to reports by the National Nutritional Institute, but the majority die as a result of chronic hunger. "An organism that is hopelessly malnourished falls victim to chronic hunger," reported Drs Roldan, Chavez, Romero and Madrigal in January 1988, "and is a defenseless organism. Infections and multiple parasitoses are able to establish themselves there without encountering any resistance. As a result, the organism does not die of hunger per se, but it dies prematurely."[31]

Specialists define hunger as "the unconscious, permanent and progressive sensation of the need to ingest food." In other words, it is an unsatisfied urge to eat. Wherever there is moderate or serious malnutrition, but not severe malnutrition, as a public health problem, there is chronic hunger. Where malnutrition is severe, there is acute hunger. Here, for example, are the results of a nutritional microstudy: "Two-thirds of the children were given a small breakfast, a normal mid-day meal, and then absolutely nothing for the rest of the day and night." The malnourished children "could not walk or talk, even though they were old enough to do so; they were indifferent to their surroundings, showing great apathy; they seemed sad, and their attitude toward the examination was hostile and uncooperative. It was also easy to see their thinness and the atrophy of the muscle masses." Of 26 children examined, 19 exhibited severe paleness, 22 had hair that was falling out, 18 had dry and pigmented skin, and 23 had hypochromic spots.[32]

In view of the proliferation of severe child malnutrition, Dr Manuel Salas of the Institute of Biomedical Research at the UNAM stated in January 1987: "Child malnutrition not only can affect the child's ability to learn, but can also affect his behavior during the periods of adolescence and maturity. It may be that many of the behavioral problems that we see today in our community were preceded by malnutrition.... The individuals who have suffered malnutrition problems in infancy may in fact function in society, but they do show certain signs of mental retardation as a result."[33] "The biochemistry of malnutrition," stated Dr Joaquin Cravioto some years ago, "has revealed many secrets.... It has been shown that protein deficiency, or the specific lack of essential amino acids, can cause structural and physiological damage to the central nervous system.... When an individual has undergone an episode of malnutrition, it is likely that he will fall victim to failure in school, that his psychological functioning will be defective, and that in later years, his adaptive mechanism will not reach normal levels."[34] The infant population is always the most vulnerable to malnutrition in the capitalist market economies. When food is in short supply, children are hit the hardest. Hence, in measuring the nutritional condition of a people, children are always considered the most representative segment.

Nevertheless, the food crisis that has plagued the poor of Mexico since 1983 is so severe that nutrition specialists are beginning to have grave concerns about the adolescent and young adult population. In June 1987, Dr Pedro Daniel Martinez of the National Nutritional Institute declared: "Young students are poorly nourished, and over time this is reflected in their ability to learn, as well as in the stagnation of their physical and mental growth.... Diet is essential during the adolescent years, because that is when the most important behavioral changes occur."[35]

In the presentation of the National Food Program 1983-1988, we read the following: "The road to an egalitarian society passes through the elimination of the conditions of poverty, in particular the malnutrition that still plagues major sectors of society." There is no doubt that the economic policy under which the crisis has been managed, and to a certain extent produced, since 1982 has indeed traveled that road, but in reverse (or, what amounts to the same thing, in a reactionary way) toward more severe states of malnutrition than existed in the late 1970's.

Table 14. Apparent National Consumption of Food Products, Mexico 1981-1986

	Total National Consumption (Tons per year)		Per Capita Consumption (Kg per year)		
Products	1981-82	1985-86	1981-82	1985-86	% Change
Primary Products					
Dressed whole beefs	1,146,019	940,713	15.8	11.6	-26.6
Dressed whole hogs					
1,336,043	1,033,766	18.4	12.8	-30.4	
Milk (x 1000 liters[a])	7,187,500	7,006,000	99.2	86.6	-12.7
Fish	1,304,734	1,028,249	18.0	12.7	-29.4
Fresh	693,546	660,806	9.6	8.2	-14.6
Processed	611,188	367,443	8.4	4.5	-46.4

Table 14. Apparent National Consumption of Food Products, Mexico 1981-1986

Products	Total National Consumption (Tons per year) 1981-82	1985-86	Per Capita Consumption (Kg per year) 1981-82	1985-86	% Change
Agricultural Products					
Corn	13,941,000	14,533,500	191.4	179.6	-6.2
Beans	1,444,500	1,155,000	19.9	14.3	-28.1
Oranges	1,894,500	1,820,000	26.2	22.5	-13.5
Bananas	1,582,000	1,259,500	21.8	15.6	-28.4
Sorghum	7,533,500	7,410,000	104.0	91.6	-11.9

a. Nationally produced cow's and goat's milk

Sources: Compiled on the basis of the Office of the President's ANEXOS ESTADISTICOS DEL V INFORME DE GOBIERNO DE M. DE LA MADRID, Mexico 1987, for all categories of total national consumption except dressed whole hogs (according to figures from the General Office of Agriculture-Livestock and Forestry Policy and Development of the Secretariat of Agriculture and Water Resources, SARH). For the average population. See Table IV [table not reproduced here].

Table 15. Supply of Beef to the Metropolitan Zone of Mexico City: 1981-1987

Years	Total Dressed Carcasses Consumed. Units* Number	Percentage	Population in Metropolitan Zone Percentage	Per Capita Meat Consumption Percentage	Dressed Carcasses Provided by Food Supply Industries Number	Percentage
1981	1,136,613	95.9	95.9	100.0	240,365	87.0
1982	1,185,469	100.0	100.0	100.0	276,298	100.0
1983	1,023,103	86.3	104.3	82.7	209,831	75.9
1984	856,587	72.3	108.8	66.5	171,096	61.9
1985	795,635	67.3	113.5	59.3	147,270	53.3
1986	893,276	75.4	118.3	63.7	165,023	59.7
1987	801,910	67.6	123.1	54.9	171,693	62.1

*Includes production of local slaughterhouses and those in the vicinity of the Federal District as well as dressed carcasses from outside the area.

Sources: SARH-General Office of Agriculture-Livestock and Forestry Policy and Development, for population; projection based on 9th and 10th General Population Censuses, 1970 and 1980, and on National Population Council (CONAPO), PROGRAMA NACIONAL DE POBLACION 1984-1988, Mexico, 1985, p 75.

Table 16. Per Capita Consumption of Food in Grams of Gross Weight, Family Average

Food	1960	1979	1981	1987
Tortillas	261	237	212	239
Pasta and Rice	28	34	27	20
Bread and Crackers	107	117	87	120
Legumes	43	44	25	46
Meats	59	88	124	78
Eggs	11	47	47	42
Milk	249	275	289	279
Cheese	1	10	4	4
Fruits	37	179	153	210
Vegetables	135	177	179	238
Soft Drinks	80	101	149	44
Alcoholic Beverages	-	19	26	2
Processed Foods	-	1	29	19

Source: Salvador Zubiran National Nutritional Institute, Division of Community Nutrition, EFECTO DE LA CRISIS EN LA ESTRUCTURA DEL CONSUMO ALIMENTARIO DE OBREROS, by Judith Aguirre Arenas, Enrique Rios Espinoza, Margarita Escobar Perez, Veronica F. Segura Suet, and Adolfo Chavez V., Mexico, 1988.

Table 17. Proportion of Low-Income Families That Reduced or Eliminated the Consumption of Some Foods in the Usual Food Basket. Survey of Metropolitan Area of Mexico City, 1983 and 1984

	March and June 1983		June 1983 and June 1984	
Foods	Reduced	Eliminated	Reduced	Eliminated
Meat	59.6	11.4	30.4	6.5
Dairy	73.5	7.5	12.9	0.2
Eggs	74.2	0.3	12.4	0.2
Fish	50.2	6.7	3.7	6.5
Beans	72.7	0.0	n.d.	0.0
Bread	68.0	1.9	7.8	0.0
Tortillas	21.9	0.0	n.d.	0.0
Fruits			10.6	1.8
Vegetables	70.2	3.3	10.1	0.5
Soft Drinks	55.8	4.4	n.d.	0.0

Source: National Consumers Institute, 100 DIAS EN EL CONSUMO FAMILIAR, Technical Office of the INCO, Mexico, 1983, and UN ANO EN EL CONSUMO ALIMENTARIO FAMILIAR DE LA POBLACION EN LA CIUDAD DE MEXICO, Technical Office of the INCO, Mexico, 1985.

Table 18. Nutritional Situation in Rural Mexico, 1979

	Total Population			Preschoolers			
Nutritional Regions	% With Deficient Protein Consumption	% of Recommended Consumption		% of Recommended Consumption		% of Malnutrition	
		Calories[a]	Proteins[b]	Calories	Proteins	Youngest	Oldest
1. Border	56.6	90	83	80	92	39.6	22.7
2. Baja California	58.1	94	91	92	115	21.7	16.1
3. Northeast	56.9	103	94	80	92	39.7	25.3
4. North	67.1	102	91	66	77	36.4	34.2
5. North Central	61.4	93	83	66	65	51.8	42.7
6. Northeast	55.1	99	91	82	94	53.8	32.4
7. North Pacific	42.8	96	107	80	98	55.8	40.6
8. Central North	73.0	73	74	48	60	68.9	55.4
9. West	59.1	83	94	71	80	42.9	39.9
10. Lowlands	73.6	81	81	59	72	56.8	51.6
11. Huasteca and Mountains	78.6	76	73	56	64	69.3	63.5
12. Northern Altiplano	64.7	74	77	59	70	69.5	69.0
13. Southwest	82.0	71	75	64	72	68.3	60.1
14. Eastern Altiplano	88.5	87	86	56	64	82.9	58.7
15. Central Gulf	69.8	87	86	59	77	72.3	64.5
16. Mixteca and Canada	88.4	64	66	48	51	78.4	70.9
17. South Pacific	79.5	70	76	44	52	87.3	81.4
18. Southeast Gulf	53.6	85	86	69	78	63.5	46.5
19. Yucatan Peninsula	74.4	76	80	55	67	72.0	66.7

a. 2,300 calories = 100 percent
b. 62 grams of protein = 100 percent
Source: National Nutritional Institute, SEGUNDA ENCUESTA NACIONAL DE ALIMENTACION, Mexico, 1979.

Table 19. Nutritional Situation of the Mexican Population, 1969-1982

Categories	Geoeconomic Zones				
	West Central	Gulf of Mexico	South	Southeast	North
Total Population					
Calorie Consumption					
Grams per day per capita	2,157	2,212	1,960	2,383	2,342
% of Recommended Amount	94.1	91.8	81.1	101.0	100.7
Protein Consumption					
Grams per day per capita	48.9	57.1	52.4	64.9	58.8
% of Recommended Amount	61.1	71.4	65.5	81.8	73.5
Grams of Animal origin	7.7	15.0	8.7	9.6	14.3
Grams of Plant origin	41.2	42.1	43.7	55.3	44.5
Preschoolers					
Calorie Consumption					
Grams per day per capita	902	993	951	965	1,029
% of Recommended Amount	70.4	79.4	76.6	76.7	76.8
Protein Consumption					
Grams per day	27.9	26.7	25.9	24.4	27.0
Grams of Animal Origin	8.3	13.3	9.7	6.3	10.6
Grams of Plant Origin	19.6	13.4	16.2	18.1	16.4
Prevalence of Malnutrition					
% of Malnourished Children	83.3	69.4	89.9	91.9	34.0

Source: H. Madrigal F., L. Batrouni K., D. Ramirez B., and L. Serrano A. "Cambio en el consumo de alimentos en Mexico," in Adolfo Chavez (editor), LA NUTRICION EN MEXICO 1980-1985, Supplement to REVISTA DE INVESTIGACION CLINICA, INN S.Z., Mexico 1986, pp 33-39. All figures come from this source except for the percentage of the recommended amount of protein consumption, estimated by us on the basis of the recommended daily protein intake of 80 grams per day proposed by the Mexican Food Supply System (SAM), which is lower than the protein consumption in developed countries (98 grams per capita per day in the capitalist countries and 100.6 grams in the countries in transition to socialism, as of 1979-81).

Table 20. Consumption of Animal Foods in Mexican Households: 1980 General Population Census

Foods Consumed and Population Groups	Total Households	Days of the Week When Households Consume Animal Foods					
		No Days		1-3 Days		4-7 Days	
		Number	%	Number	%	Number	%
Total Population	13,041,417						
Meat or Chicken		2,258,837	17.3	7,230,857	55.4	3,551,723	27.2
Eggs		1,497,897	11.5	3,526,602	28.6	7,816,918	12.7
Milk		3,599,386	27.6	1,658,739	12.7	7,783,292	59.7
Fish		8,226,954	63.1	4,400,640	33.7	413,823	3.2
Rural Population	4,172,751						
Meat or Chicken		1,353,691	32.4	2,431,900	58.3	387,160	9.3
Eggs		770,752	18.5	1,539,883	36.9	1,862,116	44.6
Milk		2,117,503	50.7	652,840	15.6	1,402,408	33.6
Fish		3,158,042	75.7	850,467	20.4	164,242	3.9
Urban Population	8,868,666						
Meat or Chicken		905,146	10.2	4,798,957	54.1	3,164,563	35.7
Eggs		727,145	8.2	2,186,719	24.7	5,954,802	67.1
Milk		1,481,883	16.7	1,005,899	11.3	6,380,884	71.9

Table 20. Consumption of Animal Foods in Mexican Households: 1980 General Population Census

Foods Consumed and Population Groups	Total Households	Days of the Week When Households Consume Animal Foods: No Days		1-3 Days		4-7 Days	
Fish		5,068,912	57.2	3,550,173	40.0	249,581	2.8

Source: National Institute of Statistics, Geography, and Information Science (INEGI) of the Planning and Budget Secretariat (SPP), X CENSO GENERAL DE POBLACION Y VIVIENDA, 1980, Resumen General, Vol. II, Mexico, 1986, Table 60.

Table 21. Consumption of Animal Foods in Mexican Households: 1970 General Population Census

Food and Number of Days Consumed	Days of the Week When Households Consume Animal Foods: Meat Consumption: 0 Days, Egg Consumption: 0 Days	0 Days, Egg Consumption: 1-3	0 Days, Egg Consumption: 4-7	1-3 Days, Egg Consumption: 0 Days	1-3 Days, Egg Consumption: 1-3	1-3 Days, Egg Consumption: 4-7	4-7 Days, Egg Consumption: 0 Days	4-7 Days, Egg Consumption: 1-3	4-7 Days, Egg Consumption: 4-7
Consume Milk 0 Days	1,084,586	172,947	99,022	308,677	631,703	285,142	44,467	42,393	35,331
Consume Fish 0 Days									
Consume Fish 1-3 Days	18,475	18,584	7,488	45,426	200,870	68,879	7,692	18,584	22,849
Consume Fish 4-7 Days	8,856	4,200	5,096	8,579	22,646	17,307	2,615	3,474	11,037
Consume Milk 1-3 Days									
Consume Fish 0 Days	27,490	34,602	15,480	50,699	221,182	103,662	6,408	20,650	26,261
Consume Fish 1-3 Days	4,004	6,501	2,333	9,444	168,025	52,907	1,795	16,536	18,907
Consume Fish 4-7 Days	930	1,319	915	1,794	26,110	33,526	701	3,970	7,783
Consume Milk 4-7 Days									
Consume Fish 0 Days	72,454	57,141	91,056	149,947	409,346	687,718	67,831	152,061	895,352
Consume Fish 1-3 Days	3,709	5,672	8,823	21,265	219,991	304,777	14,545	117,189	728,125
Consume Fish 4-7 Days	3,043	1,859	4,934	3,318	21,085	37,213	2,117	7,258	107,681

Source: General Office of Statistics, IX CENSO GENERAL DE POBLACION 1970. RESUMEN GENERAL ABREVIADO, Mexico, 1972, Table 40.

Table 22. Households' Monthly Income and Spending on Food and Beverages, Mexico: 1977

Family Income Groups in Deciles*	Current Monetary Income (pesos)	% of Expenses Allocated to Food and Beverages	Monthly Spending on Food and Beverages (pesos)
I	406	61.6	250
II	944	58.3	550
III	1,431	59.7	854
IV	2,005	57.7	1,157
V	2,693	54.5	1,468
VI	3,412	50.4	1,720
Prevailing Minimum Monthly Wage in 1977:	3,192		
VII	4,398	44.9	1,975
VIII	5,779	42.4	2,450
IX	8,204	34.9	2,863
Xa	11,787	23.8	2,805
Xb	22,137	20.2	4,472

*10 percent of the families in each income group; groups Xa and Xb, 5 percent in each group.
Source: Planning and Budget Secretariat, ENCUESTA NACIONAL DE INGRESOS Y GASTOS DE LOS HOGARES, 1977, Mexico.

Table 23. Rural Community of San Andres Tzicuila, Puebla: Nutritional Situation of Preschoolers, 1981-1982

Categories	Groups by Percent of Deviation From Ideal Weight			
	Normal Children (91-100 percent)	Malnourished Children:		
		Slight (81-90 percent)	Moderate (71-80 percent)	Severe (61-70 percent)
% of Children	23.6	34.8	34.8	4.4
Daily Consumption:				
Calories	1,215.2	1,216.1	1,087.9	896.8
Proteins	39.9	35.3	31.4	27.7
% of Recommended Amount of:				
Calories	90.01	78.37	78.66	62.65
Proteins	112.20	87.29	89.19	73.02
Calcium	110.29	86.77	73.96	96.13
Iron	72.65	74.62	57.65	58.72
Thiamine	116.98	101.68	106.33	84.16
Riboflavin	98.37	81.36	70.33	96.42
Niacin Equiv.	33.53	29.03	28.34	23.65
Ascorbic Acid	54.14	44.00	46.22	28.02
Retinol	97.03	94.06	50.51	46.53
Monthly Family Income	10,782.00	6,163.00	4,478.00	2,992.00
Official Minimum Wage per Month	5,925.00	5,925.00	5,925.00	5,925.00
% of Official Minimum Wage	182.0	104.0	75.6	50.5
Primary Occupation:				
Day Laborers	10.5	31.6	57.9	
Masons	25.0	12.5	62.5	
Farmers	29.4	41.2	29.4	
Merchants	50.0	33.4	16.6	
Land Ownership				
Less than 1 Hectare	3.4	31.0	65.6	
More than 10 Hectares	100.0	0.0	0.0	

Sources: S. E. Perez-Gil R., "Influencia de los factores sociales sobre la situacion nutricional de preescolares en un area marginada," in Adolfo Chavez (editor), LA NUTRICION EN MEXICO 1980-1985, Supplement to REVISTA DE INVESTIGACION CLINICA, INNSZ, Mexico, 1986, pp 83-95. For general minimum wage, regional average for 1981 and 1982.

Footnotes

13. "Descenderan 40% durante 20 dias los precios de la carne de pollo," article by Ignacio Herrera A., EXCELSIOR, 27 January 1988.

14. Guillermo Garcia, article: "Pese a la baja del 40% en el precio del pollo su consumo no ha crecido," EXCELSIOR, 1 February 1988. The real reason for the poultry breeders' actions came to light incidentally. When the magnates of the national poultry industry ("the most important chicken producers in the country are well-capitalized, big businesses, including Bachoco and Nutricos, that have the ability to distribute the product widely throughout the country") announced a 40-percent cut in the price of chicken, they were acting in the interests not of their hearts but of their pocketbooks: "Poultry producers have had trouble marketing their 1987 production in Mexico City. That is the reason, according to Jorge Hernandez Flores, a distributor with 18 years' experience, why poultry breeders decided to promote a discount. 'They were overstocked with production from last year,' he said. 'People don't have enough money to eat and meet all their needs,' he pointed out, 'because their wages have no buying power.' In 1985 one could buy 3.3 chickens with the minimum wage for a day; at present, the equivalent income would be enough to buy just 1.14 chickens." Thus, the sharp contraction of the domestic market, caused by the wage policy implemented in December 1982, has hit both ways, affecting both Mexican businessmen who produce for the national market and workers whose food intake has deteriorated to alarming levels.

15. "The diet information was obtained using the technique of weights and measures over periods of 72 and 48 hours. The foods eaten by the family during the period in question were quantified using scales and measuring cups, reinforced by an inventory of the foods in the family pantry." (J. Aguirre, E. Rios, M. Escobar, V. F. Segura and Adolfo Chavez, EFECTO DE LA CRISIS EN EL CONSUMO ALIMENTARIO DE OBREROS, op. cit.).

16. J. Aguirre, E. Rios, M. Escobar, V. F. Segura, and Adolfo Chavez, EFECTO DE LA CRISIS EN LA ESTRUCTURA DEL CONSUMO ALIMENTARIO DE OBREROS, op. cit., pp 7-27.

17. FAO, ANUARIO DE PRODUCCION 1983, Rome, 1984.

18. Rafael Ramos Galvan, "Problemas Nutricionales," XII CONGRESO INTERNACIONAL DE PEDIATRIA, MEMORIAS, Mexico, 1968, pp 357 ff.

19. Joaquin Cravioto, "Desarrollo intersensorial y desnutricion en el nino," XII CONGRESO INTERNACIONAL DE PEDIATRIA, MEMORIAS, Mexico, 1968.

20. Leopoldo Vega Franco, "Consecuencias de la desnutricion en la infancia," BOLETIN MEDICO DEL HOSPITAL INFANTIL DE MEXICO, Vol. XXX No. 4, Mexico, 1973.

21. Leopoldo Vega Franco, "Magnitud y naturaleza de la desnutricion infantil en Mexico," SALUD PUBLICA, Vol. XII, No. 6, Mexico, 1970.

22. S. Zubiran, A. Chavez, G. Bonfil, G. Aguirre B., J. Cravioto, J. de la Vega, "La desnutricion del mexicano," interviews, Fondo de Cultura Economica, Coleccion Testimonios del Fondo, Mexico, 1974, p 5f.

23. Dr Carlos Perez Hidalgo, "Diagnostico nutricional y tratamiento temprano de la mala nutricion," in SALUD PUBLICA, Series V, Vol. XII, No. 6, Mexico, 1970, pp 825 ff.

24. Op. cit., p 827.

25. Fernando Cesarman, "Los gordos y los flacos," EXCELSIOR, Mexico, 11 May 1987.

26. EXCELSIOR, 11 May 1987.

27. Martha Robles, "El hambre de los ninos," EXCELSIOR, 15 January 1988. The words of the teacher Espinosa, who is the director of State School No. 5 in Guanajuato, were spoken extemporaneously at a rally for the PRI presidential candidate during his recent tour of the state. Evaluations that are being carried out at present in the Secretariat of Public Education to explain the absolute decline in school registration and attendance point to children's hunger as the undeniable reason for the debacle in the schools.

28. EXCELSIOR, 26 August 1987.

29. Enrique Provencio, "1982-1984: los efectos sociales de la crisis," in J. Alcocer (comp.), MEXICO, PRESENTE Y FUTURO, ECP, Mexico, 1985, p 112.

30. "Alto Indice de Mortalidad Infantil por la desnutricion en Tampico," EXCELSIOR, 8 May 1987.

31. J. Antonio Roldan, Adolfo Chavez, Guillermo Romero and Herlinda Madrigal, GEOGRAFIA DEL HAMBRE EN MEXICO. REDEFINICION DE ZONAS CRITICAS EN NUTRICION. National Nutritional Institute, Mexico, January 1988.

32. Dr Adolfo Chavez and Dr Guadalupe Iniguez (National Nutritional Institute), "Epidemiologia de la desnutricion infantil en una comunidad rural," in SALUD PUBLICA DE MEXICO, Series V, Vol. 3, Mexico, 1968.

33. "La desnutricion afecta directamente al aprendizaje," EXCELSIOR, 11 January 1988.

34. S. Zubiran, A. Chavez, G. Bonfil, G. Aguirre B., J. Cravioto, and J. de la Vega, LA DESNUTRICION EN MEXICO, op cit., pp 11-12.

35. "La mala alimentacion de estudiantes provoca la carencia de profesionales," EXCELSIOR, 8 June 1987.

Course of 'Basic Food Basket' Costs Viewed

32480028 Mexico City ECONOMIA INFORMA in Spanish Aug 88 pp 23-38

[Article by Emilio Caballero Urdiales, Anibal Gutierrez Lara, and Rogelio Huerta Quintanilla]

[Excerpt] [Passage omitted]

Changes in Basic Food Basket

Within the context of the social consequences that the crisis is having for the majority of the population, an evaluation of the Economic Solidarity Pact (PSE) would have to recognize that the price increases have indeed slowed down. The Pact has not managed to eliminate inflation, but it has brought down the inflation rates that had been reached. Within this framework, it is appropriate to look at a basket of foods in order to track the specific movements of prices for the goods in question.

The COABASTO [General Coordinating Board for Supply and Distribution] basic food basket for the Federal District[6] considers three groups of products: fruits and vegetables, meats, and processed and packaged goods. Their prices are surveyed daily in the 16 Federal District delegations. The research is conducted only in public markets (both stationary and mobile); an average of 60 are visited each week.

The conclusion that can be drawn from this daily tracking of prices is that the deceleration of prices has been uneven, and that it appears to have ended in May. Signs of a new overall acceleration of inflation began to appear then in essential consumer items.

As Table 4 shows, over a period of 5 months the 3 groups of food products performed differently in terms of the rate of deceleration. In May, the overall increase of 5.2 percent in their prices would appear to suggest that the acceleration of prices is back.

On the other hand, according to official indicators, so far this year consumer prices have risen by 4 percentage points more than producer prices, which implies that inflationary pressures are coming from the commercial sector.

Thus, wholesale and retail traders are boosting the prices of goods in order to compensate for the reduction in the volume of sales. In the case of fruits and vegetables and meat products, the producers are also the wholesalers, so it is certain that the pressures are coming from these economic agents. This adds special interest to the study of how domestic trade and its agents influence food consumption.

Thus, for example, it has been observed that for some foods, the percentage represented by the gross income of producers and wholesalers (without considering production costs) in the sales price paid by the final consumer is above 50 percent. In the case of tomatoes, the figure is 58 percent; bananas, 59 percent; onions, 57 percent; and potatoes, 52 percent. For beef this figure is 49 percent.[7]

Diets of Low-Income Families in Mexico City

Within the framework of the Economic Solidarity Pact, it is important to look at how the family incomes of the poorest strata of the population of Mexico City have been affected, and at the spending allocated to food purchases.

December 1987, the month when the first phase of the PSE began (with the adjustment to the increase in the prices of goods and services and in minimum wages), was selected as the point of reference for evaluating the impact of economic policy on the family budget.

The products that COABASTO tracks daily in all of the markets (public markets, markets on wheels, and mobile street markets) have been divided into three major groups: fruits and vegetables, meat products, and processed and packaged goods. This information is complemented with the tracking of prices in self-service stores (public and private) by the National Consumer Institute (INCO), and with the estimates calculated by that institution in February 1988 of the amount of each product that was consumed, for a sample of families with incomes no greater than 3.5 times the minimum wage.[8]

1. Fruits and Vegetables

The products that have been considered within this group are listed in Table 5. Among them, tomatoes, green tomatoes, potatoes, bananas, and serrano chiles stand out because of the significance of their prices or the amounts purchased. Any change in the price of these products has a major impact on the family's spending on fruits and vegetables.

In December 1987, the families studied[9] spent 737 pesos daily on purchases of fruits and vegetables. By May 1988 it was necessary to spend 1,228 pesos per day on the same goods in the same quantities, an increase of 67 percent.

The average daily income of the same families was 9,070 pesos in 1987, and rose to 11,997 pesos by May of the following year. This represents an increase of just 37 percent during these months (Table 5).

Thus, this group of families had to allocate 8.1 percent of their family income to the purchase of fruits and vegetables, while in May of 1988 they could only buy these goods if they were willing to spend 10.2 percent of their total income.

The increase in prices in the fruit and vegetable basket between December and May was greater than the increase in family income, and therefore meant that the family had to decide whether to eliminate some fruits and vegetables from their diet, reduce the amounts consumed, or devote a larger share of their income to purchases in this basket, to the detriment of other goods. No matter what the choice, the family faced the erosion of its real income.

Looking at the changes in family spending and incomes from month to month, it appears that in January 1988, with a hike of 20 percent in the minimum wage, real family income improved slightly in terms of the allocation to fruit and vegetable purchases. The proportion spent on this basket was 7.7 percent of the family income in January 1988, compared to 8.1 percent in December 1987.

Nevertheless, in February 1988 the family income began to deteriorate in relative terms, and this downturn continued in April and May of that year, when the share allocated to fruits and vegetables remained at 9 percent. In March, however, the drop in the prices of just two products, tomatoes (by a considerable amount) and potatoes, helped improve the family income significantly. This shows what a strategic position these products occupy in the family diet.

From the above information, one can conclude that the prices of fruit and vegetable products as a whole have risen beyond the target limits of the PSE. This translates into a deterioration of the real family income that is allotted to the purchase of fruits and vegetables, among the low-income population of Mexico City.

2. Meat Products

The goods included in the category of meat products range from different kinds of meat (beef, pork, and chicken) to eggs and fish, as can be seen in Table 6. Eggs, chicken, and beef are the most important components of the family diet within this category of goods, judging by the quantities purchased per household.

From December 1987 to May 1988, the prices of meat products rose at a lower rate than did family income. Thus, in December 1987 families devoted an average of 2,103 pesos per day to the purchase of meat products, while the figure rose to 2,514 pesos the following May. This represents an increase of 20 percent, compared to the 32-percent increase in family income during the same period.

Clearly, family spending on the meat products basket is higher than spending on the fruit and vegetable basket, due primarily to the fact that the prices of the former are significantly higher than those of the latter.

For this reason, the proportion of total family income allocated to the purchase of meat products in December 1987 rose to 23 percent; by May 1988 that proportion was still high at 21 percent. The May figure was lower than that of the reference month, however, precisely because prices accelerated more slowly than family income.

All of this means that low-income families in Mexico City enjoyed an improvement in the income they had available for purchases of meat products during the period in question; in other words, their real income rose by 2 percentage points, if we consider just meat purchases.

It can be observed that in January 1988 the improvement in the income allotted to meat products amounts to 3 percentage points above the previous month, and this trend held up through February and March.

By April, however, that improvement slackened to 2 percentage points, and it stayed at the same level in May. By June 1988, with the increases in meat prices (a situation that cattlemen and wholesalers created by inducing a shortage of meat in Mexico City), the trend was reversed.

An increase in the price of meat, even if the other essential goods remain stable, would mean a commitment of a larger portion of the family income. This is unlikely, however, as the family would probably decide to reduce the already meager quantity of meat that it buys. If, at the same time, the prices of other goods and services rise, low-income families might decide to eliminate meat once and for all from their diets.

3. Processed and Packaged Goods

Table 7 contains a list of 20 products in this category, generically called processed and packaged goods. Fresh milk and corn tortillas are the most important foods on this list (due to both quantities and spending) in the diet of the poorest families of Mexico City.

In December 1987, family spending on the basket of processed and packaged goods amounted to 2,491 pesos, and by May 1988 purchases of the same goods represented an outlay of 3,184 pesos, a boost of 28 percent.

Given that the growth of family income during the same period was, as indicated, 32 percent, the rise in prices in the processed goods basket was lower than that of income. Therefore, the families in question saw a real improvement in the amount of income devoted to purchases of processed and packaged goods.

The same conclusion can be expressed in terms of the proportion of family income allotted to the purchase of this type of product. In December 1987, the proportion was 28 percent; by May 1988, it had fallen slightly to 27 percent.

The month-to-month changes in this indicator during the period under consideration reveal that the real improvement in income that took place in January was greater than that of March, April, and May; in other words, as in the case of meat products, the benefit obtained by consumers under the PSE eroded over time.

4. Complete Basket

Considering the complete basket, we can see that the improvement in family income in real terms, with respect to spending on meat and processed and packaged goods, is offset by the loss in purchases of fruits and vegetables. In December 1987 the family had to devote 59 percent of its total income to the purchases in the basket as a whole; by May 1988, that share amounted to about 58 percent (Table 8).

Using December 1987 as a base period, the behavior of the indicator in question reflects a significant relative improvement in the family income spent on food in January 1988, when 53 percent of income was allocated to food purchases. In February and April of that year, this improvement was reduced or kept at the same level as in January, as was the case in March. By May 1988, the ground gained was almost completely lost.

In sum, it can be said that the buying power of the lowest income families of Mexico City was very similar in May 1988 to what it had been in December 1987. This means that the minimum wage has gradually lost its real purchasing power in view of the constant rise in the prices of the food basket.

The situation described here is disturbing from the standpoint of the welfare of the low-income families of Mexico City, because those levels were already too low in December 1987 (the point of reference in the comparisons). In fact, the real wage for the month in question was 7.4 percent less than the average for all of 1987; comparing it with the average real wage of 1983, the loss amounted to 26.5 percent.

Another indicator that reveals how depressed the family economy was in December 1987 is the high percentage of the total income of the sample families (with incomes ranging from 0.8 to 1.5 times the minimum wage) that was spent on purchases in the food basket (59 percent). In the last quarter of 1983, for example, the average family in this country allocated only 29 percent of its income for this type of spending.[10]

The large share of income devoted by the poorest families of Mexico City to the food basket left just two-fifths of the family income for the purchase of the essential items other than food (housing, clothing, health, etc.) in December 1987. This fact, along with the price hikes that took place between December and May in these other categories, explains the deterioration of real wages, or the family income, if you will, throughout the period of the Economic Solidarity Pact.

Indeed, the rise in the National Consumer Price Index between December 1987 and May 1988 was 38.1 percent, that is, 6 percentage points more than the increase in family income (32 percent).

When broken down by category of spending, the same index reveals increases of 38.9 percent for foods, beverages, and tobacco during this period; 40.6 percent for housing; 39.4 percent for clothing and shoes; and 38.9 percent for health.[11] These changes are an indication of the magnitude of the erosion of family income, which can be seen across the board in all spending categories.

Another major aspect of the analysis is the trends in the prices of goods that are the most important ones in the complete food basket, given the amounts consumed by the family and/or the price level.

In December 1987, the 10 products shown in Table 9 accounted for 73 percent of spending in the full basket of the poorest families of Mexico City. In that month, 3,916 pesos was allocated for these expenditures; in May 1988, the same products required an outlay of 4,887 pesos, an increase of 25 percent over December.

The above information reflects the fact that during the period in question, the 10 most important products in the food basket, considered as a whole, required an increase in spending (25 percent) that was less than the increase required for the entire basket (30 percent), which, in turn, was less than the growth of family income (32 percent).

When we look at the changes in the prices of each of the 10 most important products, we can see how this result came about.

Between December 1987 and May 1988, the price of chicken rose 8 percent and that of eggs fell 4 percent, while the price of beef soared 43 percent and that of milk jumped 30 percent. The prices of corn tortillas and bread remained unchanged.

Special mention should be given to trends in the fruit and vegetable category, where prices skyrocketed by more than 90 percent (tomatoes, green tomatoes, and bananas). These increases have a smaller impact on family income, however, because of the low absolute level of prices in relation to the prices of beef, for example.

Thus, it is clear that some economic agents have responded to the price expectations of the Economic Solidarity Pact. This is true of the government, which set official prices, and of the private sectors involved in the production and marketing of goods such as chicken, eggs, corn tortillas, bread, and milk, because these products rose in price by less than the growth of family income.

The agents involved in the production, processing, and marketing of meat, however, and those in the fruit and vegetable sector, do not appear to have adhered to the agreement of December 1987.

The agents in the meat sector hiked prices by 12 percent between February and May 1988, when family income rose by just 3 percent; and in June 1988 they began to drive prices even higher. [passage omitted]

Table 4. COABASTO Basket, Monthly Change in Retail Prices,* December 1987 to May 1988 (%)

	January	February	March	April	May	May-December
Fruits and Vegetables	5	-4.4	19.4	30.9	10.6	73.7
Meat Products	14	2.5	3.2	3.0	4.3	29.4
Processed and Packaged Products	20.1	15.4	4.5	-3.2	4.6	46.7
Total	15.3	6.9	5.0	3.4	5.2	40.9

*Simple average of self-service stores (public and private) and public markets (stationary and mobile).
Source: BOLETIN SEMANAL DE PRECIOS Y ABASTO, COABASTO, various issues in 1988.

Table 5. Cost of the Fruit and Vegetable Basket for the Low-Income Population of Mexico City, December 1987-May 1988

Product	Daily Amount Purchased per Household Kilos or Liters	Price per Kilo or Liter in Pesos						Daily Spending per Household in Pesos					
		Dec	Jan	Feb	Mar	Apr	May	Dec	Jan	Feb	Mar	Apr	May
Lemons	0.044	943	1,959	1,450	1,051	942	938	41	86	64	46	41	41
Bananas	0.169	367	477	527	645	737	707	62	81	89	109	125	119
Avocados	0.034	846	837	927	1,684	1,944	2,202	29	28	32	57	66	75
Tomatoes	0.374	816	931	1,669	823	1,212	1,579	305	348	624	308	453	591
Green Tomatoes	0.119	658	809	666	954	1,530	1,311	78	96	79	114	182	156
Serrano Chiles	0.039	1,423	1,490	1,433	1,437	1,499	2,892	55	58	56	56	58	113
Onions	0.079	628	585	396	300	269	266	50	46	31	24	21	21
Potatoes	0.178	657	878	765	760	782	629	117	156	136	135	139	112
Total								737	899	1,111	849	1,085	1,228
Index: Dec. 1987 = 100								100	522	151	115	147	167

Family Income and Spending on Fruits and Vegetables

Item	Dec	Jan	Feb	Mar	Apr	May
1. Daily Family Income (Pesos**)	9,070	11,648	11,648	11,997	11,997	11,997
2. Daily Family Spending on Fruits and Vegetables (Pesos)	737	899	1,111	849	1,085	1,228
3. Share of Family Income Spent on Fruits and Vegetables - 2/1 (%)	8.1	7.7	9.5	7.1	9.0	10.2

*[as published] Observation in February 1988 of low formal stratum. Families with incomes between 0.8 and 1.5 times the minimum wage; unskilled blue- and white-collar workers; formal employment with health benefits. INCO, "Encuesta de Seguimiento del Gasto Alimentario de la Poblacion de Escasos Recursos," Mexico City, February 1988, preliminary results.
**Calculated on the basis of 1.5 times the minimum wage.
Source: Compiled on the basis of COABASTO, Office of Trade Statistics, and National Consumers Institute (INCO).

Table 6. Cost of the Meat Basket for the Low-Income Population of Mexico City, December 1987-May 1988

Product	Daily Amount Purchased per Household Kilos or Liters	Price per Kilo or Liter in Pesos						Daily Spending per Household in Pesos					
		Dec	Jan	Feb	Mar	Apr	May	Dec	Jan	Feb	Mar	Apr	May
Chicken	0.022	3,746	3,905	3,330	3,369	3,830	4,003	82	86	73	74	84	88
Chicken Pieces	0.124	5,616	6,106	5,068	5,150	5,827	6,067	696	757	628	639	723	752
Eggs	0.291	1,553	1,693	1,698	1,699	1,698	1,494	452	493	494	494	494	435
Pork Chops	0.028	4,959	5,381	6,038	6,142	6,384	6,716	139	151	169	172	179	188
Pork Loin	0.002	7,062	7,662	7,892	7,861	7,927	8,349	14	15	16	16	16	17z
Beef Stew Meat	0.065	2,600	3,213	3,447	3,675	3,780	3,933	169	209	224	239	246	256
Beefsteak	0.059	5,640	6,501	7,114	7,622	7,878	7,927	333	384	420	450	465	468
Ground Beef	0.034	5,639	6,589	7,135	7,581	7,877	7,925	192	224	243	258	268	269
Fresh Freshwater Bass	0.007	2,196	3,182	3,804	3,543	3,490	3,407	15	22	27	25	24	24
Whole Fresh Spanish Mackerel	0.003	3,591	4,785	4,796	5,455	5,305	5,774	11	14	14	16	16	17
Total								2,103	2,355	2,308	2,383	2,515	2,514
Index: Dec. 1987 = 100								100	112	110	113	120	120

Family Income and Spending on Meat Products

Item	Dec	Jan	Feb	Mar	Apr	May
1. Daily Family Income (Pesos)	9,070	11,648	11,648	11,997	11,997	11,997
2. Daily Family Spending on Meats (Pesos)	2,103	2,355	2,308	2,383	2,515	2,514
3. Share of Family Income Spent on Meat - 2/1 (%)	23.2	20.2	19.8	19.9	21.0	21.0

Source: COABASTO, Office of Trade Statistics, and INCO.

Table 7. Cost of the Basket of Processed and Packaged Goods for the Low-Income Population of Mexico City, December 1987-May 1988

Product	Daily Amount Purchased per Household Kilos or Liters	Price per Kilo or Liter in Pesos						Daily Spending per Household in Pesos					
		Dec	Jan	Feb	Mar	Apr	May	Dec	Jan	Feb	Mar	Apr	May
Pasta for Soup	0.056	1,010	1,865	2,180	2,275	2,265	2,150	57	104	122	127	127	120
Rice	0.074	826	964	1,042	1,017	1,009	1,033	61	71	97	75	75	76
Tuna in Oil	0.004	7,657	11,051	11,530	11,414	11,404	11,327	31	44	46	46	46	45
Sardines	0.001	2,984	2,628	3,120	3,144	3,238	3,193	3	3	3	3	3	3
Beans	0.197	782	874	965	959	957	978	154	172	190	189	189	193
Lentils	0.013	1,585	1,902	1,991	2,096	2,159	2,216	21	25	26	27	28	29
Instant Coffee	0.001	19,380	27,925	29,250	29,235	29,330	29,421	19	28	29	29	29	29
Cooked Ham	0.008	7,150	8,794	11,068	11,672	9,648	12,065	57	70	89	93	77	97
Sausage	0.011	4,793	5,584	6,373	6,900	7,414	7,450	53	61	70	76	82	82
Plastic Package of Cream	0.009	2,748	3,576	3,920	4,332	4,416	4,509	25	32	35	39	40	41
"Panela" Cheese	0.027	5,460	6,548	7,951	8,241	8,186	8,347	147	177	215	223	221	225
Fresh Milk	1.269	550	715	715	715	715	716	698	907	907	907	907	909
Other Milk Products	0.041	3,544	4,181	5,102	5,077	5,095	5,090	145	171	209	208	209	209
Corn Tortillas	1.619	275	275	275	275	275	275	445	445	445	445	445	445
Bread	0.318	900	900	900	900	900	900	286	286	286	286	286	286
Sugar	0.373	402	526	531	520	522	521	150	196	198	194	195	194
Cooking Oil	0.088	1,578	1,764	2,222	2,225	2,234	2,279	139	155	196	196	197	201
Total								2,491	2,947	3,143	3,163	3,156	3,184
Index: Dec. 1987 = 100								100	118	126	117	127	128

* [as published] This study considered the average physical consumption for the five strata of the INCO classification.

Family Income and Spending on Processed and Packaged Goods

Item	Dec	Jan	Feb	Mar	Apr	May
1. Daily Family Income (Pesos)	9,070	11,648	11,648	11,997	11,997	11,997
2. Daily Family Spending on Processed and Packaged Goods (Pesos)	2,491	2,947	3,143	3,163	3,156	3,184
3. Share of Family Income Spent on Processed and Packaged Goods - 2/1 (%)	27.5	25.3	27.0	26.4	26.3	26.5

Source: COABASTO, Office of Trade Statistics, and INCO.

Table 8. Family Income and Cost of Complete Food Basket

	Dec.	Jan.	Feb.	Mar.	Apr.	May
1. Daily Family Income. (Pesos)	9,070	11,648	11,648	11,997	11,997	11,997
2. Daily Family Spending on Food Basket. (Pesos)	5,332	6,201	6,562	6,395	6,756	6,926
3. Spending/Income (%)	58.8	53.2	56.3	53.3	56.3	57.7

Source: Tables 5, 6, and 7

Table 9. Principal Products of the Food Basket of the Low-Income Population, December 1987-May 1988

Product	Daily Amount Purchased per Household Kilos or Liters	Price per Kilo or Liter			Daily Spending per Household			Price per Kilo or Liter		
		Dec 87 pesos	May 88 pesos	% Change	Dec 87 pesos	May 88 pesos	% Change	Feb 1988	May 1988	% Change
1. Tomatoes	0.374	816	1,579	94	305	591		1,669	1,579	-5
2. Green Tomatoes	0.119	658	1,311	99	78	156		666	1,311	97
3. Potatoes	0.178	657	629	-5	117	112		765	629	-18
4. Bananas	0.169	367	707	93	62	119		527	707	34
5. Chicken	0.146	5,336	5,757	8	779	840		4,808	5,757	20
6. Beef	0.158	4,394	6,289	43	694	994		5,615	6,289	12
7. Eggs	0.291	1,553	1,494	-4	452	435		1,698	1,494	-12
8. Fresh Milk	1.269	550	716	30	698	909		715	716	0

Table 9. Principal Products of the Food Basket of the Low-Income Population, December 1987-May 1988

Product	Daily Amount Purchased per Household Kilos or Liters	Price per Kilo or Liter Dec 87 pesos	May 88 pesos	% Change	Daily Spending per Household Dec 87 pesos	May 88 pesos	% Change	Price per Kilo or Liter Feb 1988	May 1988	% Change
9. Corn Tortillas	1.619	275	275	0	445	445		275	275	0
10. Bread	0.318	900	900	0	286	286		900	900	0
Subtotal					3,916	4,887	25			
Total Complete Basket (Pesos)					5,332	6,926	30			
Relative Share %					73.4	70.6	-4			

Source: COABASTO, Office of Trade Statistics, and INCO.

Footnotes

6. General Coordinating Board for Supply and Distribution, Federal District.

7. General Coordinating Board for Supply and Distribution of the Federal District (COABASTO). Fruit and Vegetable and Beef Products Systems, Various Studies, 1985-1988.

8. According to the Income-Spending Survey of Households of December 1983, 69 percent of Mexican families earned between 0 and 3 times the minimum wage.

9. Of the five INCO strata, the low formal stratum, that is, with family earnings of 0.8 to 1.5 times the minimum wage, was chosen.

10. National Institute of Statistics, Geography, and Information Science (INEGI), National Survey of Household Income-Spending, 1983-1984.

11. Bank of Mexico, INDICES DE PRECIOS.